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ETCHING.

THIS art dates from the middle of the fifteenth century, its discoverer being Tomaso Finiguerra, a Florentine. Its value was promptly appreciated in France, Italy and Germany, but it was reserved to later times to carry it to the comparative perfection it was capable of reaching. It was seen, however, to afford greater freedom than engraving, and to supply the means of prompt execution, besides multiplying numerous impressions of the same design. With the invention of movable types in printing it was extensively used for illustration of books. Etching has now the most diversified application. We know nothing in art that renders so apparent as does etching, graceful freedom and precision of touch. Delicacy of form, subtlety of proportion and beauty of composition are among the niceties of the art. We owe to it ready access to representations of the master pieces of art, many of these affording valuable suggestive materials in the different departments of decoration, if only in catching their spirit and purpose. Architecture, moldings and ornamental designs have ever been its strong points, at the same time that it has been largely employed for figure, landscape and marine views.

The historic records of the art are abundant. Towards the close of the fifteenth century Sandro Botticello embellished with etchings an edition of Dante. Three distinguished German etchers were Shoengen, Bechellin and Wohlgruth, and among Italians Bacio, Baldini, Pottagnola and Montagna were conspicuous. In the sixteenth century Gotzius and others displayed remarkable mobility in rendering the styles of the old masters. The Dutch school distinguished itself by productions of great delicacy and power. Towards the middle of the seventeenth century we note greater freedom of action, clearness and transparency. In etchings of paintings from the old masters even their spirit was at times caught. The eighteenth century marked a conspicuous advance. The names of Woolett and LeBas shine out conspicuously. French etchings, which previously had a metallic appearance, now displayed the full resources of the art for vivid delineation and high finish. It is in this nineteenth century that etching, whilst occupying other accustomed fields, has been more fully devoted to the presentation of design in constructive work of a decorative character, as in architecture, interior embellishments and furniture.

The process of etching is based on the corrosive action of certain acids on metal and glass. Glass is etched for its own ornamentation, metal for the reproduction of the designs on paper from the plate. To produce a design the plate is covered with an acid resistant material, through which such design is traced by an etching point, shaped at its extremity as a triangular prism, also in oval form for broader lines. Another instrument provides for stippling or the making of dots in conjunction with the lines of the pointer, or separately. The handles of wood are from four to five inches long. The graver is sometimes used after etching for the execution of the finer lines, or to give to the design greater precision. The plate being exposed where the lines are traced, acid is poured on, and the lines are bit in. When this corrosive action has proceeded to a given depth, the process of stopping, or the covering a portion of the design, is resorted to, the acidulous liquid having been poured off for this purpose. The stopping is done with common resin or Burgundy pitch, and the acid is again poured on to eat deeper into the remaining portion of the exposed surface. The deepest lines and dots provide the darkest shades. The design may be traced directly or a transfer made by drawing in on paper with chalk or lead pencil, and placing this face downwards, when it is submitted to pressure.

Hard varnishes were at first used, but the advantage of more yielding and equally resistant varnish became apparent and obtained a preference. The coating composition is of wax, asphaltum, mastic, resin, etc., melted, and spread on the plate by means of a brush. Most lac varnishes are suitable. The softest ground obtainable is lard or tallow. The ground having been laid, a ridge of wax, commonly Burgundy pitch, black pitch or beeswax, is raised around the edge of the plate to confine the acid, these being previously melted over a slow fire.

Two recipes for soft varnish are, 1. Beeswax, five parts; linseed oil, one part; melted together. 2. Linseed oil, four ounces; gum benzoin, half ounce; white wax, half ounce; boiled down to two-thirds of their bulk. The following are two hard varnishes: 1. Linseed oil and mastic in equal parts. 2. White wax, two ounces; black pitch, half ounce; Burgundy pitch, half ounce, adding by degrees during boiling asphaltum, half ounce. The composition when brought to the proper consistence will, on cooling, break on being bent.

The corrosive liquids used are hydrochloric acid diluted with water for glass; diluted aqua fortis, sulphuric and pyroligneus acids for copper; iodine with iodide of potassium for steel. The mixture in using pyroligneous acid is as follows: Pyroligneous acid, eight ounces; water, 16 ounces; alum, sal ammoniac, sea salt and verdigris, of each four ounces. As soon as the solid substances have dissolved, the composition is boiled one or two hours in a glazed earthenware vessel and decanted. For steel the composition is as follows: Iodine, one ounce; iron filings, half drachm; water, four ounces; or the liquid may be composed of iodine, three drachms; iodide of potassium, one drachm; proof spirit, one ounce, and water, two ounces.

When the coating has been removed, the graver may be employed for engraving the finer parts of the design. The best effects in printing are obtained from deep semi-transparent colors with darkness in their composition, darkness aiding brilliancy by its quieting effect on the eye, and also affording the impression of depth.

Aquatinta designs are rendered in lines similar to Indian ink, bistre, etc. The ground for this is composed of a mixture of fine pulverized rosin and spirits of wine. On aquafortis being poured on this, innumerable small fissures are made in all directions, which allow the acid to give to the surface of the plate a granulated appearance similar to paper, the impression resembling also a tint or wash of color.

Electricity, that ready servitor in so many of the arts, has been brought to the aid of etching. The etching ground having been laid on a copper or steel plate and the design traced, a concentrated solution of potassium nitrate is poured on it, and a platinum wire connected with the positive pole of a battery immersed in it. A separate platinum wire connects with the negative pole, to which the point used by the etcher is attached. When this insulated point touches the coating the circuit is complete, and the course of the point is marked by the emission of brilliant sparkles of light. The electricity bites into the metal.

Successful etching of figure, landscape and marine views requires thorough perception of the relations and effects of light and shade in nature, if only to secure ærial perspective. The effect of bright sunlight is obtained simply by observing the balance of proportionate light over all the objects, and avoiding details in the shadows which in looking at nature would be lost to the eye in the general strong light of the whole scene.

Half tones and gradations of tone are secured, representing the transparency of transmitted light and the dark tones of reflected light. From the disposition of light and shade much is approximately inferred, and hence the power of expression pertaining to etching. Thus the delicate appearance of a maze of thin twigs and young leaves seen against the sky does not require a multiplicity of detail, and yet the effect of minute interlacings, which is the main characteristic—the impression which one gets at a glance—the flash of the scene, may be vividly expressed.

The beauty attainable in etching demonstrates that the absolute naturalness of the colors of nature is not so necessary that the eye cannot be gratified without it. In an oil or water painting, on the contrary, the color seen at first glance is its most alluring and fascinating quality. A lack of detail in a pictorial etching will often prove a charm. To over-emphasize detail is to lose the ærial perspective, the atmospheric effect, and often to sacrifice due proportions. With an arch emphasized by shadows, disclosing a street and vessels beyond, the latter may be indicated without being drawn. There is often a charm in indistinctness, particularly where the object of the artist is to convey an object as seen through a maze. A few telling strokes will often suffice to embody the movement of ocean waves, with a gleam of light upon them and of floating clouds.

It is for etchers to seize on the best points of an object and make the most of it; to be always on the watch for anything that suggests an idea to be worked out or that will furnish a motive that may be developed and applied to practice. We may note that there exist etchings with any number of brilliant ideas half worked out or unskilfully treated which another mind may bring to perfection. Imitation of other styles may improve their own, gaining greater delicacy and sharpness, but they should rely less on this than continual practice to develop their own successfully. Beginners are apt to attempt to represent too much, and to exaggerate unimportant details, and from indecision and a natural want of confidence, lines are not laid at a single stroke. As the liking for the work advances so does the skill. Practised etchers appear to acquire a positive enthusiasm for the work. Dexterity of hand with rapidity of execution should be sought.

In pictorial views very dark objects should come in the lower edge or foreground. Everything should lead up to the culminating point. The second and third points subordinate to this may with advantage be in positions to form a triangle with the former if connected by imaginary lines. The distribution of brilliancy must throughout accord with the position of the main light; the shadows toward the edges are to be less dark and the lights more positive.